Amendments to the Claims

1. (Currently Amended) A digital media signal processing system comprising:

a block transform-based codec for compressively encoding transform-coding blocks of a digital media signal to form a compressed representation of the digital media signal at encoding, and to decode blocks from the compressed representation to reconstruct the digital media signal at decoding;

a pre-processing filter for applying to overlapping blocks that overlap adjacent of the transform-coding block of the digital media signal prior to encoding by the block transform-based codec to effect spatial-domain lapped transform of the digital media signal; and

a post-processing filter for applying to overlapping blocks that overlap adjacent of the decoded blocks after decoding by the block transform-based codec, wherein the post-processing filter is not an inverse of the pre-processing filter, wherein the pre-processing filter is more relaxed and the post-processing filter is more aggressive relative to filters that are respectively inverses of the other.

2. (Canceled)

3. (Original) The digital media signal processing system of claim 1 wherein the pre-processing filter has eigenvalues that are less than that of a filter that is an inverse of the post-processing filter.

4. (Original) The digital media signal processing system of claim 1 wherein the post-processing filter has eigenvalues that are greater than that of a filter that is an inverse of the pre-processing filter.

5. (Original) The digital media signal processing system of claim 1 wherein the pre-processing filter has eigenvalues and the post-processing filter has eigenvalues, such that a product of the filters' eigenvalues is less than one.

6-8. (Canceled)

9. (Currently Amended) A digital media signal processing system comprising:

a block transform-based codec for compressively encoding transform-coding blocks of a digital media signal to form a compressed representation of the digital media signal at encoding, and to decode blocks from the compressed representation to reconstruct the digital media signal at decoding, the block transform-based codec having a compression quality ~~metric~~ parameter;

a set of pairs of pre-processing and post-processing filters, the pre-processing filter for applying to overlapping blocks that overlap adjacent of the transform-coding block of the digital media signal prior to encoding by the block transform-based codec to effect spatial-domain lapped transform of the digital media signal, the post-processing filter for applying to overlapping blocks that overlap adjacent of the decoded blocks after decoding by the block transform-based codec; and

a switch for selecting a pair of pre-processing and post-processing filters from the set for use with the block transform-based codec according to the compression quality ~~metric~~ parameter.

10. (Currently Amended) The digital media signal processing system of claim 9 wherein the compression quality ~~metric~~ parameter is a quantization parameter.

11. (Currently Amended) The digital media signal processing system of claim 9 wherein the block transform-based codec explicitly encodes a value of the compression quality ~~metric~~ parameter into the compressed representation at encoding.

12. (Currently Amended) The digital media signal processing system of claim 9 wherein the switch operates to enable processing of the spatial-domain lapped transform by a pre-processing and post-processing filter pair when the compression quality ~~metric~~ parameter is indicative of low quality, and disable processing by the filter pair when the compression quality ~~metric~~ parameter is indicative of high quality.

13. (Currently Amended) The digital media signal processing system of claim 9 wherein the switch operates to select among a bank of plural filter pairs having progressively

more relaxed pre-processing filter and progressively more aggressive post-processing filter as the compression quality ~~metric~~ parameter is indicative of decreasing quality.

14. (Currently Amended) A digital signal encoder device for encoding a digital media signal according to a digital media block-transform-based codec applying a post-processing filter at decoding to overlapping blocks that overlap adjacent decoded transform-coded blocks, comprising:

a forward block transform for applying on a block basis to the digital media signal to transform the blocks into a transform-domain representation for encoding in a compressed representation of the digital media signal; and

a pre-processing filter for applying to overlapping blocks that overlap adjacent of the transform blocks of the digital media signal prior to the forward block transform to effect spatial-domain lapped transform of the digital media signal, wherein the pre-processing filter is not an inverse of the post-processing filter, and wherein the pre-processing filter is more relaxed and the post-processing filter is more aggressive relative to filters that are respectively inverses of the other.

15. (Canceled)

16. (Original) The digital signal encoder device of claim 14 wherein the pre-processing filter has eigenvalues that are less than that of a filter that is an inverse of the post-processing filter.

17. (Original) The digital signal encoder device of claim 14 wherein the pre-processing filter has eigenvalues and the post-processing filter has eigenvalues, such that a product of the filters' eigenvalues is less than one.

18. (Original) The digital signal encoder device of claim 14 further comprising:

a range reduction operation following the pre-processing filter for reducing a range of coefficient values in the overlapping blocks filtered by the pre-processing filter.

19. (Original) The digital signal encoder device of claim 18 wherein the range reduction operation is a clipping of the coefficients values to remain within a limited range.

20. (Original) The digital signal encoder device of claim 18 wherein the range reduction operation clips values of the coefficient to an input value range of the forward block transform.

21. (Currently Amended) The digital signal encoder device of claim 14 wherein the block transform-based codec has a compression quality ~~metric~~ parameter, the device comprising:

a set of pre-processing filters; and

a switch for selecting the pre-processing filter from the set according to the compression quality ~~metric~~ parameter for use in encoding the digital media signal.

22. (Currently Amended) The digital signal encoder device of claim 21 wherein the compression quality ~~metric~~ parameter is a quantization parameter.

23. (Currently Amended) The digital signal encoder device of claim 21 wherein the block transform-based codec explicitly encodes a value of the compression quality ~~metric~~ parameter into the compressed representation at encoding.

24. (Currently Amended) The digital signal encoder device of claim 21 wherein the switch operates to enable processing of the spatial-domain lapped transform by a pre-processing filter when the compression quality ~~metric~~ parameter is indicative of low quality, and disable processing by the pre-processing filter when the compression quality ~~metric~~ parameter is indicative of high quality.

25. (Currently Amended) The digital signal encoder device of claim 21 wherein the switch operates to select among a bank of plural progressively more relaxed pre-processing filters as the compression quality ~~metric~~ parameter is indicative of decreasing quality.

26. (Currently Amended) A method of compressively encoding and decoding a digital media signal, comprising:

at encoding:

applying a forward block transform to a group of adjoining transform-coding blocks of the digital media signal to produce transform-domain representations of the blocks; and

applying a pre-processing filter to overlapping blocks that overlap adjacent of the transform-coding blocks of the digital media signal prior to the forward block transform to effect spatial-domain lapped transform of the digital media signal; and

at decoding:

applying an inverse block transform to the transform-domain representation of the transform-coding blocks; and

applying a post-processing filter following the inverse block transform to the overlapping blocks;

wherein the pre-processing filter is not an inverse of the post-processing filter, and wherein the pre-processing filter is more relaxed and the post-processing filter is more aggressive relative to filters that are respectively inverses of the other.

27. (Canceled)

28. (Original) The method of claim 26 wherein the pre-processing filter has eigenvalues that are less than that of a filter that is an inverse of the post-processing filter.

29. (Original) The method of claim 26 wherein the pre-processing filter has eigenvalues and the post-processing filter has eigenvalues, such that a product of the filters' eigenvalues is less than one.

30. (Original) The method of claim 26 further comprising:

performing a range reduction operation following the pre-processing filter for reducing a range of coefficient values in the overlapping blocks filtered by the pre-processing filter.

31. (Original) The method of claim 30 wherein the range reduction operation is a clipping of the coefficients values to remain within a limited range.

32. (Original) The method of claim 30 wherein the range reduction operation clips values of the coefficient to an input value range of the forward block transform.

33. (Currently Amended) The method of claim 26 comprising:

selecting a pair of the pre-processing filter and the post-processing filter from a set of pre-processing and post-processing filter pairs according to a compression quality ~~metric~~ parameter for use in encoding the digital media signal.

34. (Currently Amended) The method of claim 33 wherein the compression quality ~~metric~~ parameter is a quantization parameter.

35. (Currently Amended) The method of claim 33 further comprising explicitly encoding a value of the compression quality ~~metric~~ parameter into the compressed representation at encoding.

36. (Currently Amended) The method of claim 33 wherein the selecting comprises:

enabling processing of the spatial-domain lapped transform by a pre-processing filter and post-processing filter pair when the compression quality ~~metric~~ parameter is indicative of low quality; and

disabling processing by the pre-processing filter and the post-processing filter when the compression quality ~~metric~~ parameter is indicative of high quality.

37. (Currently Amended) The method of claim 33 wherein the selecting comprises selecting among a bank of plural filter pairs having progressively more relaxed pre-processing filter and progressively more aggressive post-processing filter as the compression quality ~~metric~~ parameter is indicative of decreasing quality.

38. (New) A digital media signal decoder for decoding a digital media signaled encoded by a block transform-based codec that operates to compressively encode transform-coding blocks of a digital media signal to form a compressed digital media signal based on a compression quality parameter signaled in the compressed digital media signal, the block transform-based codec applying a pre-processing filter applied on blocks overlapping adjacent of the transform-coding blocks to effect a spatial-domain lapped transform, the digital media signal decoder comprising:

a block transform-based decoder for decoding the transform-coded blocks;

a set of post-processing filters for applying to overlapping blocks that overlap adjacent of the decoded blocks after decoding by the block transform-based decoder; and

a switch for selecting among the post-processing filters from the set for use with the block transform-based codec according to the compression quality parameter.

39. (New) The digital media signal processing system of claim 38 wherein the compression quality parameter is a quantization parameter.

40. (New) The digital media signal processing system of claim 38 wherein the switch operates to enable processing of the spatial-domain lapped transform by a post-processing filter when the compression quality parameter is indicative of low quality, and disable processing by the post-processing filter when the compression quality parameter is indicative of high quality.

41. (New) The digital media signal processing system of claim 38 wherein the switch operates to select among a bank of plural post-processing filters having progressively more relaxed pre-processing filter as the compression quality parameter is indicative of decreasing quality.

42. (New) The digital media signal processing system of claim 38 wherein the set of post-processing filters includes a filter implementing the following matrix:

$$P_i = \begin{bmatrix} 7 & 0 & 0 & 1 \\ -1 & 7 & 1 & 1 \\ 1 & 1 & 7 & -1 \\ 1 & 0 & 0 & 7 \end{bmatrix} / 8.$$

43. (New) The digital media signal processing system of claim 1 wherein the post-processing filter is a filter implementing the following matrix:

$$P_i = \begin{bmatrix} 7 & 0 & 0 & 1 \\ -1 & 7 & 1 & 1 \\ 1 & 1 & 7 & -1 \\ 1 & 0 & 0 & 7 \end{bmatrix} / 8.$$